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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,059	05/22/2006	Guofu Zhou	NL031370	7589

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EXAMINER

LAM, VINH TANG

ART UNIT	PAPER NUMBER
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2629

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11/12/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,059	Applicant(s) ZHOU ET AL.	
	Examiner VINH T. LAM	Art Unit 2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claim 7 is objected to because of the following informalities: Typographical error.

“ ... pulse with time) of **the or** each shaking pulse ...” should be

“ ... pulse with time) of ~~the or~~ each shaking pulse ...”

Appropriate correction is required..

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-12 are rejected under 35 U.S.C. 102(e) as being anticipated by

Machida et al. (US Patent Application Publication 2002/0196207).

Regarding Claim 1, **Machida et al.** teach a display apparatus (1),
comprising:

an electrophoretic medium (5) comprising charged particles (6) in a fluid (Col. 5,
[0086], FIG. 1);

a plurality of picture elements (2) (Col. 5, [0086], FIG. 1);

said charged particles (6) being able to occupy a plurality of positions, two of said positions being extreme positions (Col. 5, [0091], FIG. 1) and at least one position being an intermediate position (Col. 6, [0104], FIG. 8) between the two extreme positions; and

drive means arranged to supply a sequence of picture potential differences (20) to each of said picture elements (2) so as to cause said charged particles (6) to occupy one of said positions for displaying an image (Col. 5, [0091], FIG. 1);

wherein said sequence of picture potential differences (20) form a driving waveform for causing said charged particles (6) to move cyclically between said extreme positions in a single optical path and effect a desired optical transition along said optical path, said picture potential differences (20) being preceded by one or more shaking pulses (10) (Col. 7, [0105], FIG. 9).

Regarding Claim 2, **Machida et al.** teach a display apparatus (1) according to claim 1, comprising:

a first (3) and a second electrode (4) associated with each picture element (2) for receiving the sequence of picture potential differences (20), the extreme positions being substantially adjacent said electrodes (3, 4) and the intermediate position being between said electrodes (3, 4) (Col. 5, [0091], FIG. 1).

Regarding Claim 3, **Machida et al.** teach a display apparatus (1) according to claim 1, having at least two intermediate positions (Col. 6, [0104], FIG. 8).

Regarding Claim 4, **Machida et al.** teach a display apparatus (1) according to claim 1, wherein the picture potential differences (20) are preceded by at least two shaking pulses (10) (Col. 7, [0105], FIG. 9).

Regarding Claim **5**, **Machida et al.** teach a display apparatus (1) according to claim 4, wherein the picture potential differences (20) are preceded by four or more shaking pulses (10) (Col. 7, [0105], FIG. 9).

Regarding Claim **6**, **Machida et al.** teach a display apparatus (1) according to claim 1, wherein the length of the or each shaking pulse (20) is of an order of magnitude shorter than a minimum time period required to drive the optical state of the apparatus from one of said extreme positions to the other (Col. 7, [0105], FIG. 9).

Regarding Claim **7**, **Machida et al.** teach a display apparatus (1) according to claim 1, wherein the energy value (defined as the integration of voltage pulse with time) of each shaking pulse is sufficient to release the particles at one of the extreme positions but insufficient to move the particles from one of the extreme positions to the other (Col. 6, [0104], FIG. 8).

Regarding Claim **8**, **Machida et al.** teach a display apparatus (1) according to claim 1, wherein said driving waveform is pulse width modulated (Col. 7, [0105], FIG. 9).

Regarding Claim **9**, **Machida et al.** teach a display apparatus (1) according to claim 1, wherein said driving waveform is voltage modulated (i.e. the different in voltages in FIG. 9 and FIG. 24).

Regarding Claim **10**, **Machida et al.** teach a display apparatus (1) according to claim 1, wherein said driving waveform is substantially dc-balanced on average (over a relatively long term) (Col. 7, [0105], FIG. 9).

Regarding Claim **11**, **Machida et al.** teach a method of driving a display apparatus (1), comprising

an electrophoretic medium (5) comprising charged particles (6) in a fluid (Col. 5, [0086], FIG. 1),

a plurality of picture elements (2), said charged particles (6) being able to occupy a plurality of positions, two of said positions being extreme positions (Col. 5, [0091], FIG. 1) and at least one position being an intermediate position (Col. 6, [0104], FIG. 8) between the two extreme positions; and

drive means arranged to supply a sequence of picture potential differences (20) to each of said picture elements so as to cause said charged particles (6) to occupy one of said positions for displaying an image (Col. 5, [0091], FIG. 1);

the method comprising generating the sequence of picture potential differences (20) in the form of a driving waveform for causing said charged particles (6) to move cyclically between said extreme positions in a single optical path and effect a desired optical transition along said optical path, and providing one or more shaking pulses (10) prior to each of said picture potential differences (20) (Col. 7, [0105], FIG. 9).

Regarding Claim **12**, **Machida et al.** teach a drive means for driving a display apparatus (1) according to claim 1, said drive means being arranged to supply the sequence of picture potential differences (20) to each of said picture elements (2) so as to cause said charged particles to occupy one of said positions for displaying an image (20) (Col. 7, [0105], FIG. 9);

wherein said sequence of picture potential differences (20) form a driving waveform for causing said charged particles (6) to move cyclically between said extreme positions in a single optical path, said picture potential differences (20) being preceded by one or more shaking pulses (10) (20) (Col. 7, [0105], FIG. 9).

Conclusion

The prior arts made of record and not relied upon is considered pertinent to applicant's disclosure are: Gates et al. (US Patent No. 6531997), Machida et al. (US Patent No. 6753844), Matsuda et al. (US Patent No. 6822783), Goden (US Patent No. 7057600), and Oue et al. (US Patent No. 7342556).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VINH T. LAM whose telephone number is (571)270-3704. The examiner can normally be reached on M-F (7:30-5:00) EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on 571 272 1206. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2629

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/VTL/

/Amare Mengistu/

Supervisory Patent Examiner, Art Unit 2629